

## Butte Department.

### LESSONS IN MINING

The Outline of Study for the Visiting Columbia College Students.

PREPARED BY PROF. PEELE

Drilling and Blasting, Handling the Ore and Timbers, Description of Deposits, Exploration and Other Notes.

The class of Columbia college students who have taken up their residence in Butte for the summer have a pretty thorough outline of study laid out for them. The outline has been prepared by Prof. Robert Peele and is published as follows in the Western Mining World:

#### A—DRILLING AND BLASTING.

1. Character of Rock—Note character and hardness of rock and ore, as affecting rate of drilling, and determining temper given to drills. Observe presence of slips, cleavage and bedding planes, their general direction and frequency, their influence upon depth and position of drill holes, and amount of ground broken by each blast.

2. Drilling, by Hand and Machine—Note number and length of drills forming a set; size of drill steel used, and diameter of holes; shape of cutting edge; number of inches drilled by each bit. Examine condition of bits after they have been drilled; observe if blunted, cracked or chipped edges. Note speed of drilling; causes of delays, if any, number of holes drilled per shift, with average and total depth; number of drills used per shift. Single and double-hand drilling; size of drill steel and weight of hammer used for each method. Note carefully the actual operations of drilling; cleaning out holes. Observe the method of preparing the "face" for starting holes; general arrangement of holes with respect to each other, and to roof and sides of drift or stope; the depth and direction of holes as influenced by shape or contour of portion of ore to be blasted. If several holes are fired, note which takes precedence, and reasons for same.

Kind of rock drill used. Observe methods of setting up; preliminary work necessary in adjusting the drill, and total time occupied. Number of men employed, and duties of each man. Size of drill steel; diameter of holes; starting the machine; changing drills as hole is deepened; speed of drilling in feet per hour.

3. Blasting—Note amount of powder proportioned to kind of rock, depth of hole, and if possible the length of "line of least resistance." Observe contour of face before blasting, and the effect of blast. Method of charging hole; kind of dynamite used, trade name and grade, and size and weight of cartridges; length of fuse, and how inserted in cartridge; kind of tamping used; the tamping tools, and precautions in tamping. After the blast, note possible indications of excessive charge of powder, viz: projection of pieces of rock to a distance, crushing of the rock around the hole, and excessive breaking up of ore. Observe whether blast is satisfactory to the miners; reasons of failure of a blast. Missfires; their cause, and precautions taken. Clearing away debris after blasting; notes the "sounding" of fissured and loosened rock; work of "barrowing down." Number of feet driven per month, and amount of steel, powder and other supplies consumed.

4. Sketches. a. Of various tools employed. b. Show positions of holes with respect to the face; draw them to scale in three projections, and number them in order of firing.

B—HANDLING THE ORE.  
1. Observe method of handling ore after blasting, and whether there be any separation of grades or hand sorting underground; disposal of waste; throwing the ore down through "mills" to level below; construction and capacity of chutes for loading into cars. Construction, dimensions and capacity of cars; gauge of track; method of laying track, switches and turnouts; latches, turntables, etc.; kind of rail used, strap iron or T-rail; weight of rail; shaft signals for starting, stopping, etc. Time required to make a round trip in regular hoisting; handling of ore on surface. Amount of ore hoisted per day.

2. Sketches—Detail sketches, with complete dimensions, of car and cage or skip, galloways frame, loading chutes underground, and chairs or dogs at shaft landings. Sketches of frogs, switches and latches; single, double and triple deck cages; method of holding cars on cage. Special sketch of round trip in regular hoisting; handling of ore on surface. Amount of ore hoisted per day.

C—TIMBERING.  
1. Note the various purposes for which timbering is used underground, viz: to support weak portions of hanging walls; to support excavations through loose or broken ground; to carry the broken ore in the stopes, thus furnishing indirectly a support for the miners while stopping. Use of stulls for narrow work and square set timbering for wide stopes. Note also method of timbering drifts. Kind of timber used. Observe use of spilling for soft ground.

2. Observe method of putting in square sets or stulls, the selection of suitable place for head and foot of stull, by inspecting and "sounding;" cutting the "hitch." Measuring and cutting the timber on surface; shape of head and foot; setting in place; use of wedges. Framing timbering by machinery.

3. Sketches—Details of shaft timbering, giving joints and all dimensions; shaft stations; timbering to support pumps, column pipe and ladders. Complete sketches of square sets: posts, caps and girts.  
D—DRAINAGE.  
Observe system of drainage, giving location and arrangement of pumps, sumps, tanks, etc. Height of suction and lifts; lines of steam and water pipe; use of siphon. Describe and sketch each pump; stroke and diameter of cylinders; simple, duplex or compound; number and arrangement of valves; repairs and packing of pumps; attendance required; covering of steam pipe, and disposal of exhaust; calculate number gallons pumped per day. Number of hours pumps are kept in operation. Inquire as to variation of amount of water in wet and dry seasons. Observe effects of acid water; inquire how long column pipe and pump parts last. Note provisions for

resisting action of acid water. Tank for raising water.

E—DESCRIPTION OF DEPOSIT.  
Note number, dip and strike of veins, character and hanging and foot walls, and mineralogical character of ore. Observe position, thickness and extent of the "pay-streaks;" pinching and widening out; occurrence of ore chutes and barren zones; variations in quality of ore; occurrence of faults, "breaks," and dikes.

F—EXPLOITATION.  
1. Describe the general plan of working the deposit; development by inclined or vertical shafts, cross-cutting and drifting. Note size and position of drifts as influenced by character and thickness of vein. Distance apart of levels. Methods of securing and controlling ventilation.  
2. Stopes—Observe manner of starting stopes; their arrangement, and method of working for wide and narrow ore bodies.  
3. Sketches—Longitudinal and transverse sections of mine, on small scale, showing number, distance apart and dimensions of shafts and levels. On these sketches show location of pumps, engines, etc.

#### G—SURFACE PLANT.

1. Sketches—Map showing position of various parts of surface plant with respect to shafts. Hoisting engine, compressors, boilers, ore bins, machine, blacksmith and carpenter shops. Plan of shaft house, arrangement of mine and railroad tracks, switches and turnouts; plates around mouth of shaft; lines of steam, air and water pipes. Note source of feed water for boilers. Detail plans of the various shops, etc.

2. Sketches with dimensions of galloways frame. Arrangement of shafts.  
3. Sketch and describe hoisting engine; dimensions of drum and cylinders; valve motion; gearing, brakes and reversing gear; piston and drum speed; note steam pressure, kind and size of rope. Foundation of engine. Distance from mouth of shaft. Calculate horse-power of hoist.

4. Describe compressors; dimensions of steam and air cylinders; speed of stroke. Sketch details of valves and valve motion; method of cooling air during compression. Note pressure of steam and air; air receivers and regulator; diameter of piping; number of drills supplied by compressors. Horse-power developed.

5. Sketches of ore bins and trestles as complete as possible. Dimensions, capacity and method of framing. Arrangement of bins with respect to shaft. Detail sketches of framing, and of loading chutes and gates. Foundation.

6. Blacksmith Shop—Observe method of sharpening and tempering of drills for hand and machine work.  
7. Machine Shop—Repairing machine drills; note parts most liable to wear and breakage. Sketch the various parts of drills, giving dimensions.

#### A LIE NAILED.

The Flag Story Righted in San Francisco by John Maguire.

Through John Maguire and the San Francisco Examiner of last Thursday the people of San Francisco are set right on the lie given in a public lecture by Prof. J. Q. A. Henry, an A. P. A. orator, that Catholics of Montana had fired on the flag as an insult to it. On reading Professor Henry's "version" of the flag incident, as published in the Examiner, Mr. Maguire at once sent a telegram to Rev. P. C. York, Mr. York embodies the telegram in a letter to the Examiner which begins as follows:

"San Francisco, June 10, 1903.  
"To the Editor of the Examiner—Sir: I have been compelled to suspend for one day my inquest on the malodorous remains of Ananias. My time has been taken up by another inquest, to-wit: on the malodorous remains of the A. P. A. I hope to be able to publish the results of this inquest, and to publish in it the most startling story of greed, duplicity, treachery and baseness ever told the people of California.

"Not a week ago Ananias Henry proclaimed from the platform that he was here to stay. 'I am here to join the fight,' he said on May 31, 'and I want to have a chance to speak to every liberty-loving American in this city and on this coast before the close of the 6th of November.' It is only the 10th of June at this writing and Henry is fleeing back to Chicago with his tail between his legs like a whipped cur.

"In my last letter I challenged Henry to produce a single instance in which Catholics had insulted the flag. His answer was to cite the action of some men in Montana who had used the flag as a target.

"I replied that Henry had given no proof to show that the Catholic church had had anything to do with that outrage. That reply was logically sufficient. But I am glad to be able, through the kindness of a friend personally unknown to me, to contradict the whole fabrication. Yesterday I received the following telegram over the Western Union wires:

"Butte, Mont., June 9, 1903.—To Rev. Father, York, St. Mary's Cathedral: Henry lies concerning the flag in Montana. Local militia some months ago spread old weather-stained bunting used for outside decorations across a frame which was too small to tack a bull's-eye on for rifle practice. Some time after a charge was made of firing on the flag by mischievous persons who thought the captain a Catholic. Investigation was made. The parties bringing the charge were rebuffed for placing a false statement before the world by the governor, the Grand Army and the Loyal Legion. The majority of the firing party were Protestants, commanded by a Protestant captain, Gardiner, an estimable gentleman. Henry maliciously insults the good citizens of Montana. John Maguire."

"I do not know who Mr. John Maguire is, but I take this opportunity to thank him publicly for his ready defense of his fellow citizens. If there were more Americans like John Maguire, fearless to speak the truth and willing to sacrifice something for the spread of the truth, there would be fewer mountebanks like Ananias Henry. Again I thank Mr. John Maguire, not only for myself, but for all decent Americans who love justice and hate hypocrisy."

Excursion \$39.—N. E. A. \$39.  
For the national educational association meeting at Buffalo, N. Y., June 22 to 30th, the Great Northern railroad company will make the above round trip rate via Duluth and North Steamship company. All rail both ways, \$65.50. These rates include membership fee of \$2.25. Mixed tours, rail one way and steamer the other at proportionate rates. This will be the most delightful excursion of the season. For further information address E. I. Whitney, G. P. & T. A., St. Paul, J. E. Dawson, general agent, Butte.

## HE'S A LIVING JONAH

The Most Remarkable Career of William Jones, a Poor Man.

IN ALL KINDS OF TROUBLE

His Tale of Misfortune Unfolded to the County Commissioners, Who Furnish Him Transportation Out of the Country.

An old, deaf, rheumatic and crippled poor house inmate named William Jones, was before the county commissioners the other morning with a doleful plea to be furnished with transportation to Denver. He hoped that a change of climate might be a good thing for his old bones. Jones told the commissioners, and subsequently a Standard reporter, a wonderful tale of woe about himself to show that he is a man of curious misfortune and entitled to more than ordinary consideration. He said that years ago he was a man of some importance in Nevada where he conducted a large hotel. The house burned down one night and everybody in it was burned to death except himself. He alone escaped unharmed, but he lost everything.

The next misfortune that befell him was several years later when he was one of a party of miners who started to cross one of the high mountains in Nevada. They were caught in a snow slide and 17 of them were killed but Jones lived to tell the tale. At another time he was in a boat on a river. The boat upset and all but he were drowned. After that he was regarded as a Jonah and nobody would have anything to do with him. He could get no employment in the mines because it was feared his influence would cause an explosion or some other disastrous accident. He could get no job on a farm because the farmers feared drouth, cyclones, or earthquakes on his account. He attempted to get work on the railroads, but his reputation had preceded him and not for the world would he be permitted to get on a train. It got so that people avoided him and children ran frightened from him when they met him on the streets, and the more he was talked about the greater grew the stories of his Jonahism. It finally became necessary for him to leave Nevada because he could not live there.

The railroads refused him transportation and he had to beat his way. He stole a ride on a blind baggage and the train was wrecked before it had gone 13 miles with him. In the course of time he got into Utah, but how he never could tell. He disguised himself and got a job herding sheep and in less than a month every bloody sheep in the herd had died from an epidemic disease that struck the country just to Butte and arrived here on Jan. 15, 1893. That night occurred the great dynamite explosion. He tried to get employment at his old trade of blacksmithing, but his evil genius took a new tack and he could not get a job because he was not a union man, "and I am the best ——— tool sharper that ever struck the town, too," he said yesterday in relating his misfortunes. The commissioners decided that Jones was a most worthy object of charity and they furnished him with transportation to Denver, where he has some friends who will assist him.

Bargains for Housekeepers.  
While on my trip east to buy furniture I bought at auction a large quantity of furniture and some 2000 small carpets, which I will have on sale Monday. To make room for these goods we will make a cut in price on our already well assorted stock of household furniture. We would advise an inspection of these goods before buying elsewhere. We have stationed an agent in the east to buy at auction and private sale whenever there are bargains to be had; so hereafter it will be able to furnish your house for you at eastern prices. H. Strasburger, 73-75 W. Park street.

A sterling silver waist set with each purchase or repair of \$1 or over.

Will you attend the republican national convention at St. Louis? If so, don't lose sight of the fact that by taking the "Hurlington Route" via Billings you will save 10 whole hours over other routes. Special rates and the best of accommodations.

Our opening is on Monday, Tuesday and Wednesday.

Home-manufactured Ready Mixed Paints at Schatzlein's, 14 W. Broadway.

Men's fine russ calf, razor toe, hand sewed, \$4.50. John Caplice Co.

John Meek, cigars, 122 W. Park st.

OXYGEN is the mainspring of all Life. The New Oxygen Cure Instrument cures while you sleep. No loss of time. Causes the human body to drink in the oxygen of the air. Thus cures all diseases that are caused more easily than contracted. Sixty-page illustrated book sent free. 20,000 testimonials. R. Goodrich, 322 1/2 N. Main St., Butte.

Wm. Hoge, M. B. Brownlee, R. C. Chambers, Marcus Day, E. K. Sargeant.

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Transacts a General Banking Business. Exchange drawn on the leading cities of Europe. COLLECTIONS PROMPTLY ATTENDED TO. Correspondents: Wells Fargo & Co., New York; Wells, Fargo & Co., San Francisco; Wells, Fargo & Co., Omaha National Bank, Omaha; Hoge, Day & Co., Anaconda.

BITTER ROOT VALLEY FRUIT FARMS

\$500 100 Acres: good title; near neighbors, and best of soil.  
\$800 100 Acres: 5 mill v. from Postoffice; 50 acres fenced and improved.  
\$400 40 Acres: 3 miles from town; 25 acres improved; good title.  
\$1500 40 Acres: 100 fruit trees; neat cottage 3 rooms; 2 miles from Postoffice and depot.  
\$2000 100 Acres: 500 trees; all under fence; best of soil.  
\$3500 100 Acres: 500 bearing trees; good buildings; near depot.

Write or call on GEO. F. BROOKS Real Estate Missoula, Montana

## HENNESSY'S

### BIG CARPET BARGAINS

See These Prices

LOWELL BODY BRUSSELS and other standard makes in good designs and colorings, with borders to match; never made for the price.....

85 cents

SPECIAL LINE WILTON CARPETS

62 1/2 cents

TAPESTRY BRUSSELS, special line in good patterns.....

40 cents

TAPESTRY BRUSSELS in a large variety of patterns, with borders to match, suitable for parlors and bedrooms; extra value.....

65 cents

Extra Super All Wool Ingrain Carpets

45 cents

Special line Best All Wool three-ply Ingrain Carpets.....

68 cents

SPECIAL LINE LINOLEUMS.....

50 cents

Sheepskin Door Mats, assorted colors and sizes.....

75 cents and \$1.25



### Rugs at Half Price

Our entire stock of Rugs will be closed out at Half Price or a trifle more or less. All sizes, up to 8x10 feet. Irish Point Carpets, 3 1/2 yards long, 160 pairs Lace Carpets in White and Ecru, worth from \$2.50 to \$3 pair; go at.....

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### CAN'T KEEP STILL.

Notwithstanding our business this year has eclipsed all others, we make a big bid for new customers and increased trade this week by offering unusual inducements in Carpets and Dress Goods.

A small business would not warrant such Startling Cuts in Prices. Ours has been enormously successful, so we would make a clearance of what stock has been left. No old stuff; but all this season's goods.

OUR MID-SUMMER CARPET SALE

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